REMARKS

Claims 1; 6; 13; and 38 to 42 remain in the application. Among these, claims 1 and 6 are independent method claims. Claims 7; 8; 10; 14; 15; 17; 18; 19; 20; 21; 22; 23; 25; 26; 27; 29; 31; 32; 34; 35; 36; and 37 were previously withdrawn as being directed to a non-elected invention or species. Applicant seeks the opportunity to consider reinstatement of certain withdrawn claims upon allowance of allowable subject matter.

Claims 1, 6, 13, and 38 to 42 were rejected under 35 U.S.C. § 112 ¶ 1 as failing to comply with the enablement requirement. Applicant believes the claims are enabled, and support for these claims can be found on page 27, line 15 – page 30, line 2, which provides tests carried out with respect to all three types of cancer. This biological testing is sufficient to show that results carried out according to the present invention do, in fact, provide a basis for treating cancers, as claimed. The federal case law and the MPEP have stated clearly as such:

> As a general matter, evidence of pharmacological or other biological activity of a compound will be relevant to an asserted therapeutic use if there is a reasonable correlation between the activity in question and the asserted utility. (Citations omitted) ... The applicant does not have to prove that a correlation exists between a particular activity and an asserted therapeutic use of a compound as a matter of statistical certainty, nor does he or she have to provide actual evidence of success in treating humans where such a utility is asserted. Instead, as the courts have repeatedly held, all that is required is a reasonable correlation between the activity and the asserted use. *Nelson v. Bowler*, 626 F.2d 853, 857, 206 USPQ 881, 884 (CCPA 1980).

MPEP §2107.03

The testing described in the application indicates the efficacy of the testing compounds, and there is more than a reasonable correlation between the described testing and the asserted utility, i.e. treating a person for the recited cancers.

Three articles were cited (Section XVII of the Jere Beasley Report, 2005; the Cancer Blog, 2006; and www.msnbc.com, 2005), which state that PFOA may be a carcinogen, and which, therefore, are alleged to teach against the therapeutic efficacy of the PFOA. It was suggested according to these three articles that the nature of the art is unpredictable, which would suggest that the results in the specification cannot form a basis for enablement. However, each of the cited articles is more anecdotal and argumentative, and do not provide support to refute the results in the

current application, wherein the results clearly demonstrate that the presently claimed compounds do show the desired results. Each of the three are related in some instance with potential FDA standards and possible/potential lawsuits with products containing Teflon®, which are irrelevant to whether or not the present application is enabled by the experimental results of the application, which correlate directly to the claimed methods. As has been noted by the Federal Circuit in *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir.), a disagreement in the interpretation of data and the conclusion made from the data does not constitute a basis for a rejection for lack of enablement. *See* MPEP §2164.01(a). In *In re Wands*, the Courts stated that the patent specification was enabling, even if the Patent Office disagreed with the results. Similarly, the present specification provides ample testing and results to enable the claims, regardless if a third party's opinion infers that the results may be opposite of what is claimed.

The concerns in the prior art cited by the examiner that PFOA might cause tumors in humans arises solely from animal experiments, primarily in rats. However, there is considerable doubt whether the mechanism of tumor causation by PFOA in rats is relevant to humans. For examples, see the attached State of New Jersey Memorandum from Gloria Post "pfoa_dwguidance.pdf" (also available at http://www.defendingscience.org/case_studies/upload/pfoa_dwguidance.pdf), and the attached document from the American Council on Science and Health, "The Top Ten Unfounded Health Scares of 2006 #6 - Teflon Contains a Cancer Causing Chemical (PFOA)" (http://www.acsh.org/publications/pubID.1438/pub_detail.asp). Based on these documents, the skilled person would not conclude that PFOA has been demonstrated to be a human carcinogen.

Moreover the cited documents deal with an alleged EPA concern over levels of PFOA present in the environment. The skilled person would appreciate that the medicinal use proposed in the present application implies very different exposure in terms of route of administration, level of exposure and duration of exposure than would be the case from an environmental consignment. Further, the concerns of the EPA have no general relevance to medical efficacy. The problems of using the EPA's animal toxicity data to predict human toxicity are well known in the art. *See* the attached document by Knight *et al*, "For and Against: Which Drugs Cause Cancer?" BMJ USA (2005) 5:477-479.

In addition, the skilled person would be well aware that many medicinally useful compounds have associated cancer risks. For example, the attached article by O'Dwyer & Price, 2005, from the Sun Herald indicates that oral contraceptives and hormone replacement therapy drugs increase cancer incidence (http://www.smh.com.au/news/health/pill-and-hrt-drugs-cause-cancer-say-researchers/2005/07/30/1122144056410.html). Also, the attached article by Hasslberger, 2005, referring to the article by Ellison, 2005, indicates that cholesterol lowering drugs including statins such as lipitor, increase cancer incidence (http://www.newmediaexplorer.org/sepp/2005/01/14/lipitor_zocor_pravachol_cholesterol_lowering_drugs_cause_cancer.htm). Nevertheless, each of these drugs is commonly and routinely prescribed to patients.

Further, the suggestion that all references teach against the therapeutic claimed invention do not relate to enablement of the invention – the specification provides the examples and results to enable the claimed invention. Rather, such teachings go towards showing that the present invention is patentable, as the results, which are clearly delineated in the specification, were unexpected. We submit that the results described in the present application teach the skilled person the principal of using the named compound as anti-cancer agents, even if the specific details of formulation and dosing regime remain to be chosen. As mentioned in the paragraph spanning pages 27-28 of the description, the sulphorhodamine B (SRB) assay which was used to test inhibition of tumor cell growth in vitro using human tumor-derived cell lines is the assay used by the National Cancer Institute / National Institute of Health (NCI/NIH) to screen for anti-cancer agents. *See* the attached abstract by Voigt, 2005, and the attached article by Boyd describing how the SRB assay was selected for use by the NCI. Thus, the experiments described in the application utilized art-recognized methods of identifying anti-cancer agents.

It has also been suggested that the examples provided in the specification do not provide enablement since they are *in vitro* tests. This is not the standard for enablement. "An *in vitro* or *in vivo* animal model example in the specification, in effect, constitutes a "working example" if that example "correlates" with a disclosed or claimed method invention." MPEP §2164.02. In the present application, the examples correlate directly with the claimed invention and constitute working examples of the claimed invention. That is, the examples are directed towards a method of treating breast cancer, colon cancer, or prostrate cancer, which "correlates" directly towards the

claimed methods of treating breast cancer, colon cancer, or prostrate cancer, thereby providing a working example. As discussed above, FDA standards and evidence of actually treating humans is not necessary for a disclosure to be enabling. The examiner has not suggested any references that contradict what has been reported in the specification, but only references that *in vivo* testing is preferred over *in vitro* testing. One having ordinary skill in the art would accept the results in the specification as reasonably correlating to the claimed methods and, therefore, the specification is enabling. MPEP § 2164.02 (citing *In re Brana*, 51 F.3d 1560, 1566, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (reversing the PTO decision based on finding that *in vitro* data did not support *in vivo* applications). The specification provides working examples that correlate directly to the claimed methods, and the specification is enabling.

The present invention does not require undue experimentation, either. The enablement requirement is directed towards whether the specification supports and correlates to what is claimed, and not whether or not the specification will support clinical testing or an FDA approved drug, which are irrelevant to patentability and enablement. "Considerations made by the FDA for approving clinical trials are different from those made by the PTO in determining whether a claim is enabled." MPEP § 2164.05, see also MPEP § 2107.01 III ("The Federal Circuit has reiterated that therapeutic utility sufficient under the patent laws is not to be confused with the requirements of the FDA with regard to safety and efficacy of drugs to [be] marketed in the United States").[1]

As stated in the MPEP, "[t]he applicant need not demonstrate that the invention is completely safe. MPEP §2164.01. The Examiner correctly points out that the level of skill in the art is very high for the present invention. Those in this field of art typically engage in complex experimentation.

> The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue.

MPEP § 2164.01 (Citations omitted).

> For example, it is not necessary to specify the dosage or method of use if it is known to one skilled in the art that such information could be obtained without undue experimentation. If one skilled in the art, based on knowledge of compounds having similar physiological or biological activity, would be able to discern an appropriate

[1] The MPEP refers to the MPEP § 2107-2107.03 for standards applying to utility and enablement in drug cases. MPEP § 2164.06(a).

> dosage or method of use without undue experimentation, this would be sufficient to satisfy 35 U.S.C. 112, first paragraph.

MPEP §2164.01 (See also MPEP § 2107.01 and § 2107.03.).

The present application provides the compounds (along with the compounds' corresponding CAS numbers) used to carry out the stated experiments, where the compounds were purchased, the steps to carry out the experiments, and the results for these experiments. The application provides sufficient and ample evidence to replicate the experiments, which as stated above, form an enabling, working example. The present specification provides considerable guidance and direction to carry out the experiment for someone of a high level of skill in the art; the specification is enabling.

Enablement is based on whether the disclosure provides support for the claims, and not for further requirements, such as whether the invention will be the most efficient, or whether the invention will meet FDA standards. "Usefulness in patent law, and in particular in the context of pharmaceutical inventions, necessarily includes the expectation of further research and development." *In re Brana*, 51 F.2d 1560 (Fed. Cir. 1995) (cited in MPEP § 2107.01). For this reason, the MPEP states that examiners should not "require that an applicant demonstrate that a therapeutic agent based on a claimed invention is a safe or fully effective drug for a human". MPEP § 2107.01. Enablement is not precluded by the need for further experimentation even if the experimentation is complex. MPEP § 2164.01(a). The issue is whether or not the necessary experimentation is undue MPEP § 2164.01(a). In this case, synthesizing the compound and formulating it into a suitable dosage form is not undue experimentation.

The present specification provides support for the claims and is enabling, even if someone may argue an opposite result may arise. As the courts have stated, "it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure." MPEP § 2164.044 (Citing *In re Marzocchi* 39 F.2d at 224, 169 USPQ at 370 (C.C.P.A. 1971). There has been no support put forth as to why one should doubt that the specific results and experiments reported in the specification are accurate, but rather opinions that general results in the art may be to the contrary of the actual, reported results. The specification supports the claims.

As there has been no prior art rejecting the claims, it is believed claims 1; 6; 13; and 38 to 42 are therefore believed to be in condition for allowance, and allowance is respectfully requested.

Respectfully Submitted,

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